Message

From: Fleisig, Erica [Fleisig.Erica@epa.gov]
Sent: 2/10/2021 12:58:54 AM
To: Beaman, Joe [Beaman.Joe@epa.gov]; Kesler, Karen [Kesler.Karen@epa.gov]; Wirick, Holiday [wirick.holiday@epa.gov]
CC: Sengco, Mario [Sengco.Mario@epa.gov]
Subject: Q for Joe re: ND selenium and heads up re: pre call

Hi guys,

I see that Holly is out until Feb. 15 and our meeting with ND is on Feb. 17. Karen nicely reminded me of my acting R8 liaison duties today and suggested maybe we have a pre-call before this meeting with ND, so I'll work on scheduling that now in Holly's absence.

Karen also pointed out that ND is mentioning below collecting mercury data. I assume this is related to looking at the mitigating effects of mercury on selenium (as opposed to doing something wrt mercury criteria) but I'm not totally sure. **Joe**, I'm going to defer to you if you think we should include Amanda on this call, and if so, please forward her the invite on Feb 17 and the pre-meet I'll set up. I know you've been doing some work on mercury too so I defer to you on who from HECD to include. Thank you!

Erica Fleisig
Team Leader, Regional Water Quality Standards Branch
Office of Science and Technology, U.S. EPA
(202) 566-1057

From: Wax, Peter N. <pwax@nd.gov>
Sent: Thursday, January 28, 2021 10:13 AM
To: Fleisig, Erica <Fleisig.Erica@epa.gov>; jnett@nd.gov; Beaman, Joe <Beaman.Joe@epa.gov>; Kesler, Karen <Kesler.Karen@epa.gov>; Wirick, Holiday <wirick.holiday@epa.gov>; Wert, Joshua E. <jewert@nd.gov>; Aaron Larsen <allarsen@nd.gov>
Cc: Sengco, Mario <Sengco.Mario@epa.gov>; Quarnstrom, James E. <jquarnst@nd.gov>; Ussatis, Todd J. <tussatis@nd.gov>
Subject: RE: Selenium Call

February 17th not July 17th It is really cold here so maybe Freudian.

From: Wax, Peter N.
Sent: Thursday, January 28, 2021 9:01 AM
To: Fleisig, Erica <Fleisig.Erica@epa.gov>; Nett, Joseph H. G. <jnett@nd.gov>; Beaman, Joe <Beaman.Joe@epa.gov>; Kesler, Karen <Kesler.Karen@epa.gov>; Wirick, Holiday <wirick.holiday@epa.gov>; Wert, Joshua E. <jewert@nd.gov>; Larsen, Aaron L. <allarsen@nd.gov>
Cc: Sengco, Mario <Sengco.Mario@epa.gov>; Quarnstrom, James E. <jquarnst@nd.gov>; Ussatis, Todd J. <tussatis@nd.gov>
Subject: RE: Selenium Call

Dear All:

July 17th at 10-11 AM CT (11-12 ET) looks like everyone can make. We will need to be efficient.
The goal of this meeting to ensure we are taking the correct samples, preparing them correctly and analyzing them using the proper procedures.

Sincerely,

Pete
701-328-5268
pwax@nd.gov

DRAFT AGENDA FOR CALL (PLEASE ADD AS NEEDED)

Goals of Meeting (Selenium in fish flesh and water quality monitoring 2021)

1) Identify data needs for development of water column aquatic life criteria
2) SOP (Collection/transportation of Samples)
3) Analytical Method for Selenium in Water.
4) Analytical Method for Selenium in Flesh.

Stream Data Collection

Timing: Summer through late fall (Sampling is collocated with wadable rivers and streams work).
Location: Twenty (20) stream sites in Ecoregion 46.
Sample Type/Analytes: Whole Fish.
Sample Analysis: Mercury and Selenium Dry Weight

Question 1: What is the preferred analytical (Laboratory) method?
Question 2: Maximum detection limit required for interpretation?
Question 4: Is electro-shocking acceptable method of collection?

Sample Water Analysis: Water Column, Trace Elements total & dissolved, nutrients, major cations & anions.

Question 1: What is the preferred analytical method for selenium dissolved and mercury?
Note: Based on Historical data, fish species will be small in size. Examples: Fathead Minnow, stickleback, Common Shiner, Black Bullhead, White Sucker, Darters, Dace, Common Carp.

Sample Numbers: Target a 5 fish (3 minimum) per composite, and a minimum weight of 20 grams. Ideally all 5 samples are of discrete species but if not possible multiple samples of the same species until at least 5 are met. If more than 5 species present collect as many 3 to 5 fish composites as possible.
Total 127 samples (100 regular, 3 repeats, and 12 QA/QC).

Question 1: Is 10% QA/QC adequate?
Question 2: Is multiple samples of same species acceptable?

Lake Data Collection Note: Plan A: Lake sample with new shocking boat. Plan B is coordinate with the North Dakota Game and Fish Department

Timing: Summer through late fall.
Location: Ecoregion 46 (Sampling is collocated with Ambient Lake Sampling, HABs investigations and possible the NDG&F survey work).
Sample Type: Biopsy flesh pugs, fillets, and possibly whole Fish (based on labor restriction).
Sample Flesh Analysis: Mercury and Selenium Dry Weight.
Sample Water Analysis: Water Column, Trace Elements total & dissolved, nutrients, major cations & anions.

Question 1: What is the preferred analytical (Laboratory) method?
Question 2: Maximum detection limit required for interpretation?
Question 3: Is electro-shocking acceptable method of collection?

Sample Water Analysis: Water Column, Trace Elements total & dissolved, nutrients, major cations & anions.

Question: What is the preferred analytical method for selenium dissolved and mercury?

Sample Numbers: Target a 5 fish (3 minimum) per composite, and a minimum weight of 20 grams. Ideally all 5 samples are of discrete species but if not possible, multiple samples of the same species until at least 5 are met. If more than 5 species present collect as many 3 to 5 fish composites as possible.
Total 83 samples (75 regular, 8 QA/QC).

Question: Is 10% QA/QC adequate?
Question: Is multiple samples of same species acceptable?

Opportunist Fish Collection
Timing: Spring through late fall.
Location: Any Ecoregion (Samples will be dependent on opportunities to obtain fish flesh or possible ovum material from other natural resource agency work). Examples my include NDG&F or USFWS fish population survey. Locations my be in Ecoregion 46 or areas bordering ecoregion 46 but all within the boundaries of the state.
Sample Types: : (1) Whole (2) Muscle, (3) Ovum.
Sample Analytes: Mercury and Selenium Dry Weight for whole fish and muscle and Selenium Dry Weight for ovum.
Sample Numbers: Unknown but no more than 50.
Sample Water Analysis: Water Column, Trace Elements total & dissolved, nutrients, major cations & anions.
Keep your powder dry,

Pete

From: Sengco, Mario <Sengco.Mario@epa.gov>
Sent: Monday, November 23, 2020 11:16 AM
To: Wax, Peter N. <pwax@nd.gov>; Wirick, Holiday <wirick.holiday@epa.gov>; Kesler, Karen <Kesler.Karen@epa.gov>; Larsen, Aaron L. <allarsen@nd.gov>; Nett, Joseph H. G. <jnett@nd.gov>; Beaman, Joe <Beaman.Joe@epa.gov>; Fleisig, Erica <Fleisig.Erica@epa.gov>
Subject: RE: Data for Selenium

Thanks for the update, Pete.

Mario

From: Wax, Peter N. <pwax@nd.gov>
Sent: Monday, November 23, 2020 12:02 PM
To: Sengco, Mario <Sengco.Mario@epa.gov>; Wirick, Holiday <wirick.holiday@epa.gov>; Kesler, Karen <Kesler.Karen@epa.gov>; Aaron Larsen <allarsen@nd.gov>; jnett@nd.gov; Beaman, Joe <Beaman.Joe@epa.gov>; Fleisig, Erica <Fleisig.Erica@epa.gov>
Subject: Data for Selenium

Dear All:

I am compiling all the selenium data for ND. I am waiting on Aaron to get me the fish species list for ND.

I felt it would be beneficial to do this as a single send then to do it piece meal.

Should have i6t gathered up late this week or early next. Appreciate everyone's help.

Pete

From: Sengco, Mario
Sent: Wednesday, November 18, 2020 12:47 PM
To: Wax, Peter N. <pwax@nd.gov>
Cc: Wirick, Holiday <wirick.holiday@epa.gov>; Kesler, Karen <Kesler.Karen@epa.gov>; Larsen, Aaron L. <allarsen@nd.gov>; Nett, Joseph H. G. <jnett@nd.gov>; Beaman, Joe <Beaman.Joe@epa.gov>; Fleisig, Erica

<Fleisig.Erica@epa.gov>
Subject: RE: Selenium

CAUTION: This email originated from an outside source. Do not click links or open attachments unless you know they are safe.

Hi, Pete

Your email really made my day!

I'm glad to hear that you all are moving forward with the sampling work. We stand ready to join your consortium and help in any way we can. In addition to Holly, Karen and myself (who will be a spectator primarily), please include another Se expert, Joe Beaman (Beaman.Joe@epa.gov), to the team. He and the others will be the Rockstars, while all I can claim to be is a Nats fan (Baby Shark doo-doo-doo-doo...!)

Looking forward to get the work started!

Mario

Mario R. Sengco, Ph.D.
Physical Scientist
Region 8 WQS Liaison

U.S. Environmental Protection Agency
Office of Water/OST/SHPD/Regional Branch
U.S. EPA Headquarters, WJC Building
1200 Pennsylvania Avenue NW (MC 4305T)
Washington, DC 20460
+1 202 566 2676 phone
+1 202 566 0409 fax
sengco.mario@epa.gov

Courier Address:
1301 Constitution Avenue NW
WJC West Building, 6105W
Washington, DC 20004

From: Wax, Peter N. <pwax@nd.gov>
Sent: Wednesday, November 18, 2020 12:07 PM
To: Sengco, Mario <Sengco.Mario@epa.gov>
Cc: Wirick, Holiday <wirick.holiday@epa.gov>; Kesler, Karen <Kesler.Karen@epa.gov>; Aaron Larsen <allarsen@nd.gov>; jnett@nd.gov
Subject: Selenium

Dear Mario:

Preliminary thinking about selenium. A dangerous thing with me [like an i386 with an unstable hard drive].

The State of ND is going to refresh its fish flesh data. Targeted for this work is Mercury and Selenium. Mercury for Human Health (eating) and Selenium for aquatic life.

I am looking to assemble a couple brilliant folks to bounce ideas off with the goal of improving the odds of yielding useful results. Or "best design" to likely yield the desired results – Desired outcome and actual Yield are a capricious couple.

Purely, voluntary and not an official type thing.

Ms. Kesler and Ms. Wirick have graciously offered to help set up the selenium flesh and WQ monitoring strategy and I was hoping to add a Rockstar and Nationals' fan to the list.

Recognized Selenium Deficiencies
Old fish data
Muscle only
Lake only
Adult eatable fish species
Water quality data mostly non-detects

Selenium Fixes
Collect a broader range of species: How many? Individual or homogenized? what species?
Collect rivers, streams, creeks, lakes and reservoirs
Collect whole, muscle, maybe ovum/ovaries
Analytical procedures changes?
Analytical addition of dissolved selenium?

Again, just looking to get folks thinking about it. Presently I do not have a lot of spare time (finishing my WQ standards review and figure out the 401 stuff) but "Spring" will come sooner than expected.

Never forget "The cavalry is always just around the corner".

Sincerely,

Peter

Peter N. Wax
Special Projects
Division of Water Quality

701.328.5268 • pwax@nd.gov • https://deq.nd.gov/

NORTH Dakota Be Legendary.™ | Environmental Quality